

REMARKS

Claims 1-7 and 9-20 are pending in this application. By this Amendment, claims 1-3, 6, 7 and 9-14 are amended, and claim 8 is cancelled without prejudice or disclaimer. Various amendments are made to the claims for clarity and are unrelated to issues of patentability.

The Office Action rejects claims 1-20 under 35 U.S.C. §102(b) over U.S. Patent. 5,621,467 to Chien et al. (hereafter Chien). The rejection is respectfully traversed with respect to the pending claims.

Independent claim 1 recites a video codec decoder for decoding an inputted image frame and outputting a decoded image frame, and an error concealment block for detecting an error-generated block in the decoded image frame based on a pixel value of the detected block and an average value of pixel values of blocks adjacent to the detected error block, the error concealment block further for compensating the detected error block through a median filter and outputting a compensated image frame.

Chien does not teach or suggest at least these features of independent claim 1. More specifically, Chien does not teach or suggest detecting an error-generated block in a decoded image frame based on a pixel value of the detected block and an average value of pixel values of blocks adjacent to the detected error block. When discussing dependent claim 2, the Office Action (on pages 2-3) appears to assert that Chien's col. 4, lines 1-17 teaches features relating to a pixel value of the detected block and pixel values of blocks adjacent to the detected block. However, Chien's col. 4, lines 1-17 relates to data TR, which is a prediction of a lost block based on motion vectors. See FIG. 4. This does not teach or suggest the detection of an error-

generated block based on a pixel value of the detected block and an average value of pixel values of blocks adjacent to the detected error block.

Chien relates to a system from which data from a buffer is coupled to a frame check sequence (FCS) decoder 16 that examines error corrected data for uncorrected errors according to FCS bits appended to transport packets. See FIG. 2. The FCS decoder 16 may pass transport packets D to element 18 along with an error signal ED indicating whether the transport packets contain data errors. See col. 3, lines 1-25. Further, Chien states that the transport header data and error data ED are utilized to determine what data is lost. See col. 3, lines 22-25. Accordingly, Chien does not teach or suggest the detection of an error-generated block based on a pixel value of the detected block and an average value of pixel values of blocks adjacent to the adjacent error block. The discussion in Chien's col. 4, lines 1-15 relates to functions of an error concealment apparatus 26 (FIG. 2) in which block TR (i.e., prediction of lost block) may be used in order to determine the mode of error concealment to be executed for the missing block B. See column 4, lines 9-12.

Furthermore, Chien does not teach or suggest the error concealment block further for compensating the detected error block through a median filter. The Office Action cites Chien's col. 11, lines 10-20 when discussing this feature. However, col. 11, lines 10-20 does not relate to compensating a detected error block through a median filter.

For at least the reasons set forth above, Chien does not teach or suggest all the features of independent claim 1. Thus, independent claim 1 defines patentable subject matter.

Independent claim 7 recites decoding an inputted image frame and outputting a decoded image frame, and detecting a block error of the decoded image frame based on a pixel value of a block having the detected block error and pixel values of blocks adjacent to the block. Independent claim 7 also recites compensating the detected block error through a median filter, and outputting a compensated image frame. For at least similar reasons as set forth above, Chien does not teach or suggest all these features of independent claim 7. Chien does not detect the block error based on a pixel value of the block having the detected block error and pixel values of blocks adjacent to the block. Thus, independent claim 7 defines patentable subject matter.

Independent claim 14 recites an error detection member to detect a block having an error in a decoded image frame, an error refinement member to determine whether the block detected by the error detection member is one of an error block and an error-free block based on a pixel value of the detected block and pixel values of blocks adjacent to the detected block. Independent claim 14 also recites an error correction filter to compensate the error block using a median filter to form a compensated block, the error-free block to bypass the error correction filter, and a frame generation member to restore the decoded image frame from one of the compensated block and the error-free block. For at least similar reasons as set forth above, Chien does not teach or suggest all these features of independent claim 14. Thus, independent claim 14 defines patentable subject matter.

For at least the reasons set for the above, each of independent claims 1, 7 and 14 define patentable subject matter. Each of the dependent claims depends from one of the independent claims and therefore defines patentable subject matter at least for this reason. In addition, the

dependent claims recite features that further and independently distinguish over the applied references.

For example, dependent claim 3 recites the error refinement block confirms whether the detected block is the error block by averaging pixel values of blocks adjacent to the detected error block to obtain the average value, obtaining an absolute value for a difference between the average value and the pixel value of the detected error block, and comparing the absolute value with a predetermined value. See also dependent claims 6, 9 and 12.

When discussing dependent claim 3, the Office Action recites Chien's col. 7, lines 1-17. However, this cited section relates to image motion analysis that includes six motion vector correlation measures and a weighted average of the six. This does not teach or suggest the features of dependent claim 3 relating to averaging pixel values of blocks adjacent to a detected error block and/or the obtaining of the absolute value. Thus, dependent claim 3 defines patentable subject matter at least for this additional reason. Dependent claims 6, 9 and 12 define patentable subject matter for at least similar reasons.

Additionally, dependent claim 4 recites that the error refinement block determines the detected error block as the error block when the absolute value is greater than the predetermined value, and determines the detected error block as a block having no error when the absolute value is less than the predetermined value. See also dependent claim 10.

When discussing dependent claim 4, the Office Action recites Chien's col. 7, lines 1-17. For at least similar reasons as set forth above, Chien does not teach or suggest these features. More specifically, Chien's col. 7, lines 1-17 does not relate to an absolute value and a

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predetermined value as claimed. Thus, dependent claims 4 and 10 define patentable subject matter at least for this additional reason.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-7 and 9-20 are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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